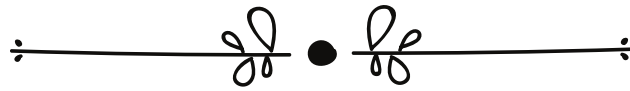


BIOHACK NOTES



CELL CYCLE AND CELL DIVISION

- BASED ON ACTIVE RECALL AND SPACED REPETITION
- TARGET 360/360 IN NEET BIOLOGY & 100/100 IN BOARDS!



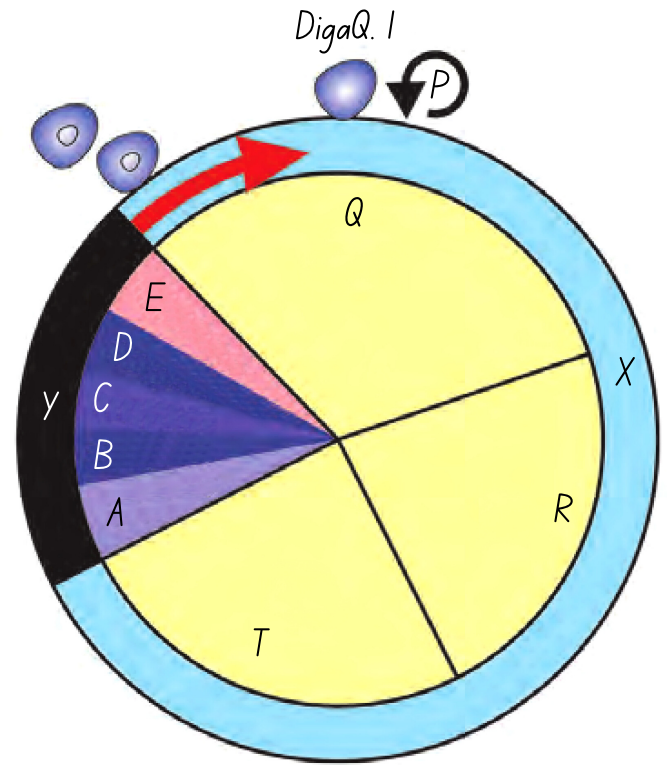
PARTH GOYAL



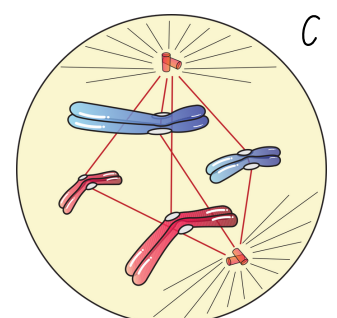
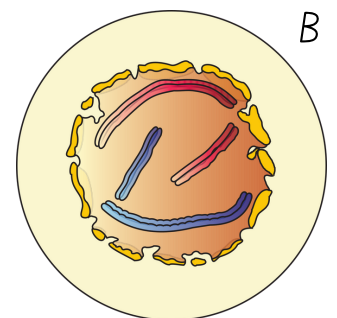
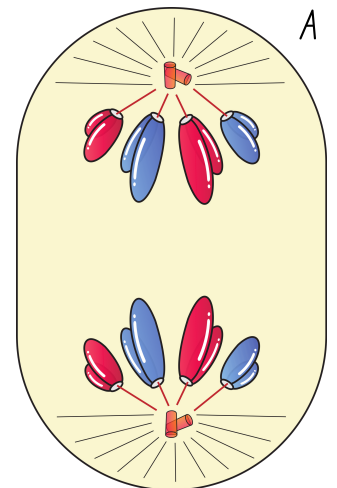


• PHASES OF CELL CYCLE

1. The human cell divides once in approximately ____ hrs.
2. _____, can progress through the cell cycle in only ____ minutes.
3. Cell cycle is divided into 2 phases, Name them.
4. The interphase lasts more than ____% of the duration of cell cycle. (NEET)
5. M phase is divided into (2) -
6. Interphase is divided into 3 phases. Name them.
7. DNA synthesis takes place in ____ phase. (NEET)
8. There is an increase in the no. of chromosomes in S phase. T/F (NEET)
9. In S phase, centriole duplication begins in nucleus. T/F
10. What happens in G_2 phase?
11. Onion have ____ no. of chromosomes.
12. Heart cell do not divide. T/F
13. Cells after completing M phase enter first into G_0 phase. T/F
14. G_0 phase is also called _____
15. Cell enters G_0 phase by exiting ____ phase.
16. Cell entering the G_0 phase exit the cell cycle. T/F (NEET)



DigaQ. 2



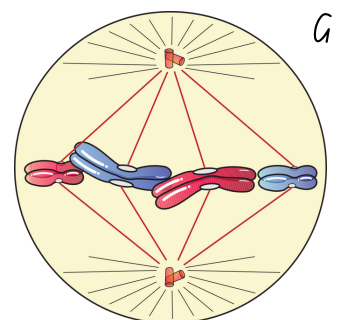
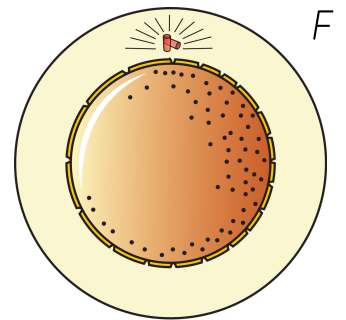
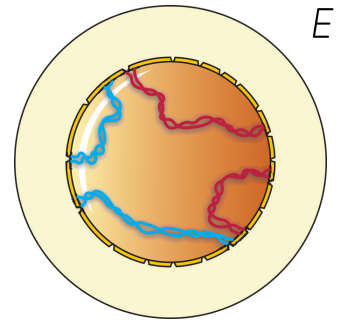
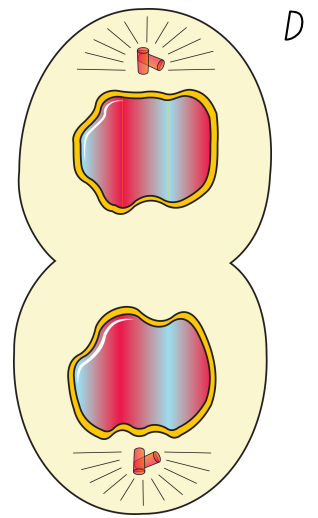
• M PHASE

17. _____ is the most dramatic period of the cell cycle.
 18. It is also called _____
 19. Cytokinesis is a part of M phase. T/F
 20. Name the 5 phases.
- ### • Prophase, Metaphase, Anaphase & Telophase
21. _____ is marked by the initiation of condensation of chromosomal material.
 22. The end of prophase is marked by what characteristic events ? (2)
 23. Each centrosome radiates out microtubules called _____
 24. Two asters together with spindle fibres forms _____
 25. Cell at the end of prophase don't show - (4) (NEET)
 26. What marks the start of the 2nd phase of mitosis ?

27. Chromosomes are clearly observed in which stage? (NEET)
28. What is most easily studied in metaphase? (NEET)
29. _____ serve as a site of attachment of spindle fibers (NEET)
30. Disc shaped structure at the surface of centromere are - (NEET)
31. The plane of alignment of the chromosomes at metaphase is called _____
32. Key features of metaphase is (2)
33. Migration to the opposite pole starts in _____. (NEET)
34. Key Events are (2)
35. Chromosome decondense and lose their individuality in _____
36. Nucleolus, Golgi complex and ER reform in _____ (NEET)
37. Two daughter nuclei are formed in _____

• Cytokinesis

38. In an animal cell, this is achieved by the appearance of a _____ (NEET)
39. In animal cells, cytokinesis occurs centripetally/centrifugally.
40. Centrifugal cytokinesis occur in -
41. Formation of the new cell wall begins with the formation of a simple precursor, called _____
42. In some organisms, cytokinesis do not occur forming _____
eg. _____ (NEET)
43. A very significant contribution of mitosis is cell repair. T/F



• MEIOSIS

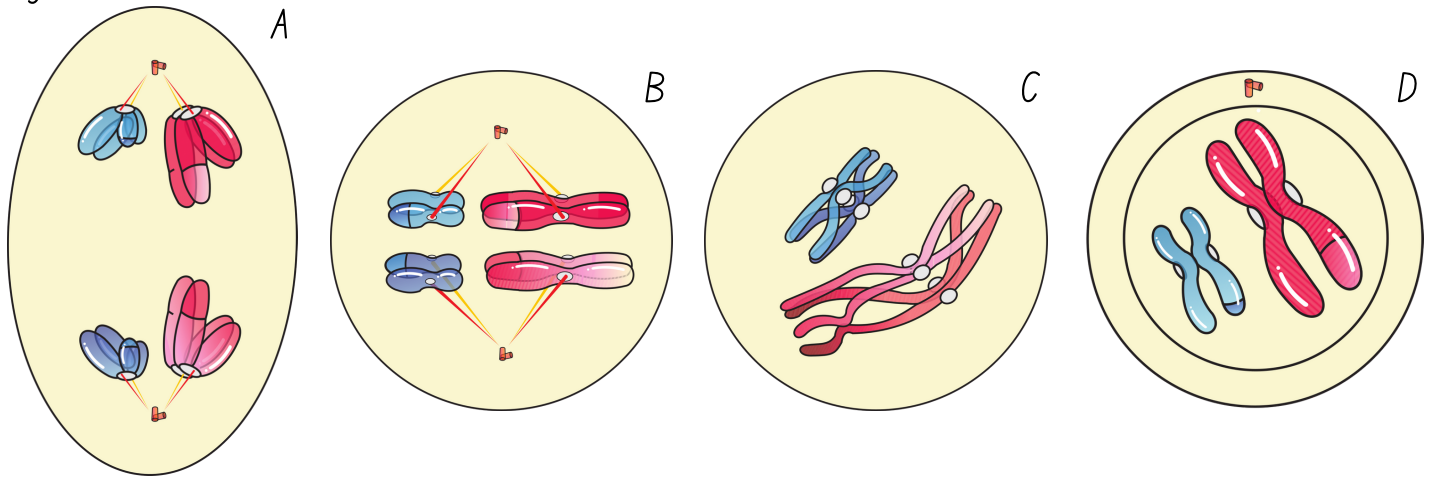
• Prophase I

44. Prophase of the first meiotic division is typically shorter and less complex when compared to prophase of mitosis. T/F
45. The 5 phases of meiosis I are - (NEET)
46. Chromosomes becomes gradually visible in _____
47. The compaction of chromosomes continues throughout _____
48. Chromosome start pairing together in _____ stage and this process is called _____ (NEET)
49. Paired chromosomes are called _____ chromosomes. (NEET)
50. Chromosome synapsis is accompanied by the formation of complex structure called _____ (NEET)
51. The complex formed by a pair of synapsed homologous chromosomes is called a _____ or _____ (NEET)



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DigaQ. 3



52. The first two stages of prophase I are relatively long-lived compared to pachytene. T/F

53. Four chromatids of each bivalent clearly appear as tetrad in -

54. Pachytene is characterised by appearance of-

55. What is a recombinant nodule?

56. Enzyme involved in crossing over is - (NEET)

57. Recombination between homologous chromosomes is completed by the end of _____

58. Beginning of diplotene is recognised by - (NEET)

59. X shaped structures called _____ are formed in - (NEET)

60. In _____, diplotene can last for months and years.

61. _____ is marked by terminalisation of chiasmata. (NEET)

62. By the end of _____, nucleolus disappears and the nuclear envelope also breaks down. (NEET)

• Metaphase I, Anaphase I, Telophase I & Meiosis II

63. Bivalent chromosomes align on the equatorial plate in _____ (NEET)

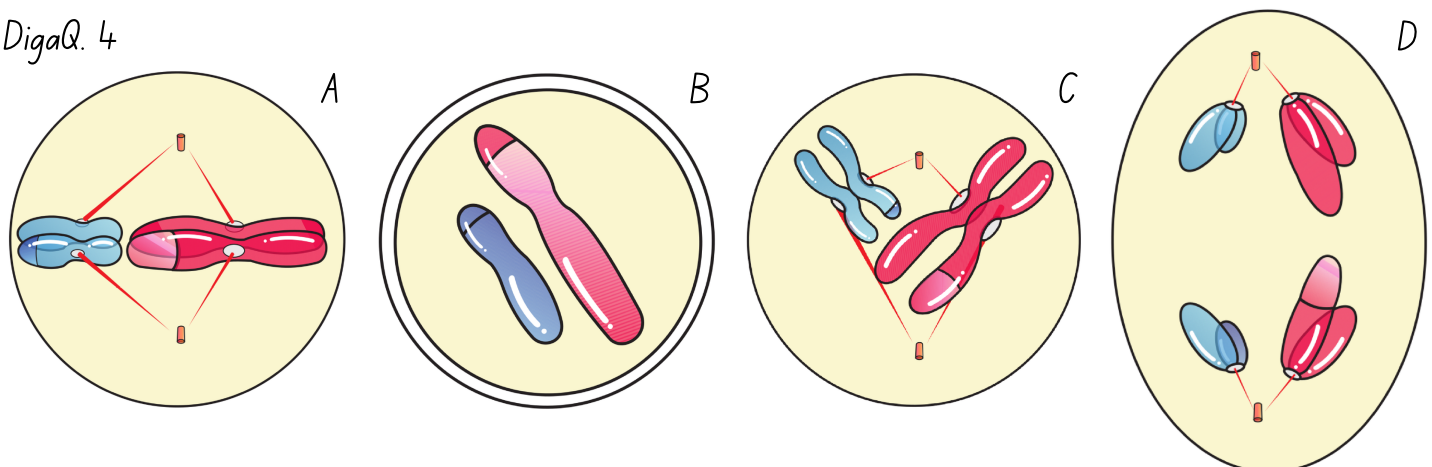
64. In Anaphase I, sister chromatids separate. T/F (NEET)

65. No replication of DNA occurs during interkinesis. T/F

66. Dyad of cell is formed in -

67. _____ are very important for the process of evolution

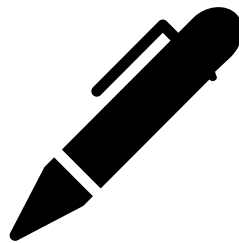
DigaQ. 4



CELL CYCLE AND CELL DIVISION



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ANSWERS

• PHASES OF CELL CYCLE

1. 24
2. Yeast, 90
3. Interphase & M Phase
4. 95%
5. Karyokinesis and Cytokinesis
6. G_1 phase, S phase, G_2 phase
7. S
8. F
9. F, in cytoplasm
10. proteins are synthesised in preparation for mitosis
11. 16
12. T
13. F
14. Quiescent phase
15. G_1
16. F

• M PHASE

17. M phase
18. Equational division
19. T
20. Prophase I Metaphase I Anaphase I Telophase I Cytokinesis
21. Prophase
22. Chromosomal material condenses to form compact mitotic chromosomes, Assembly of mitotic spindles
23. Asters
24. Mitotic apparatus
25. golgi complexes, endoplasmic reticulum, nucleolus and the nuclear envelope
26. complete disintegration of the nuclear envelope
27. Metaphase
28. Morphology of chromosomes
29. Kinetochore
30. Kinetochore

31. Metaphase plate
32. Spindle fibers attach to kinetochore, chromosome align along metaphase plate
33. Anaphase
34. Centromeres split and chromatids separate, Chromatids move to opposite poles
35. Telophase
36. Telophase
37. Telophase
38. Furrow
39. Centripetally
40. Plants
41. Cell plate
42. Syncytium, eg. liquid endosperm of coconut
43. T

• MEIOSIS

44. F, longer & more complex
45. Leptotene, Zygotene, Pachytene, Diplotene and Diakinesis
46. Leptotene
47. Leptotene
48. Zygotene, synapsis
49. Homologous
50. Synaptonemal complex
51. bivalent or a tetrad
52. F, short lived
53. Pachytene
54. Recombinant nodule
55. the sites at which crossing over occurs between non-sister chromatids of the homologous chromosomes
56. Recombinase
57. Pachytene



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58. dissolution of the synaptonemal complex
59. Chiasmata, diplotene
60. Oocytes of some vertebrates
61. Diakinesis
62. Diakinesis
63. Metaphase I
64. F
65. T
66. Telophase I
67. Variations

• DigaQs

DigaQ. 1

X - Interphase

P - G_0

Q - G_1

R - S

T - G_2

Y - M phase

A - Prophase

B - Metaphase

C - Anaphase

D - Telophase

E - Cytokinesis

DigaQ. 2 - Stages in Mitosis

A - Anaphase

B - Transition to metaphase

C - Late prophase

D - Telophase

E - Early prophase

F - Interphase

G - Metaphase

DigaQ. 3 - Stages of Meiosis I

A - Anaphase I

B - Metaphase I

C - Prophase I

D - Telophase I

DigaQ. 4 - Stages of Meiosis II

A - Metaphase II

B - Telophase II

C - Prophase II

D - Anaphase II



SCAN AND DONATE US SO THAT WE
CAN CREATE MORE SUCH QUALITY
CONTENT FOR YOU!

JUST ₹10-20 WILL BE APPRECIABLE! :)



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